

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Anadarko Minerals, Inc.
Well Name/Number: Dahl 2-16
Location: SE NE Section 16 T30N R45E
County: Valley, **MT;** **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 15 to 20 days drilling time.

Unusually deep drilling (high horsepower rig): No, big double derrick drilling rig or a small triple derrick drilling rig to drill to 7,300' TD Duperow Formation test.

Possible H2S gas production: Yes possible H2S gas.

In/near Class I air quality area: Yes, Class I air quality area, Fort Peck Indian Reservation.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Big double derrick drilling rig or a small triple derrick drilling rig to drill to 7,300' TD. No special concerns.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, oil base invert drilling fluid system will be utilized on the mainhole. A freshwater and freshwater mud system will be utilized on the surface hole

High water table: None anticipated.

Surface drainage leads to live water: No, closest surface drainage is an unnamed ephemeral tributary to Middle Fork Wolf Creek, about 1/16 of a mile to the east from this location.

Water well contamination: No, closest water wells are about 5/8 of a mile to the southeast from this location. Depth of these water wells are 125'. Surface casing setting depth of 825'. Surface hole will be drilled with freshwater and surface casing set and cemented back to surface from 825'.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 825' of surface casing cemented to surface adequate to protect freshwater zones.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None in the area of review. Crossing only ephemeral drainages.
High erosion potential: No, moderate cut up to 16.7' and small fill, up to 7.9' required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, 310'X250' location size required.
Damage to improvements: Slight
Conflict with existing land use/values: Slight, surface use appears to be grazing land.

Mitigation

- ☐ Avoid improvements (topographic tolerance)
- ☐ Exception location requested
- ☒ Stockpile topsoil
- ☐ Stream Crossing Permit (other agency review)
- ☒ Reclaim unused part of wellsite if productive
- ☐ Special construction methods to enhance reclamation
- ☐ Other _____

Comments: Using existing county road, #Oswego Road and existing well ranch access road. Will have to build about 242' of new access road into location off existing ranch access road. Oil based drilling fluids will be recycled to the next location or returned to the mud company. Completion and freshwater drilling fluid will be hauled to a commercial Class II disposal. Cuttings will be left in the lined pit. Cuttings and pit will be buried after being allowed to dry. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residence is about 1/2 of a mile to the northwest from this location.
Possibility of H₂S: Yes, H₂S possible.
Size of rig/length of drilling time: Big double or small triple drilling rig/moderate 15 to 20 days drilling time.

Mitigation:

- ☒ Proper BOP equipment
- ☐ Topographic sound barriers
- ☒ H₂S contingency and/or evacuation plan
- ☐ Special equipment/procedures requirements
- ☐ Other: _____

Comments: Operational BOP and adequate surface casing should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Black-footed Ferret, Interior Lease Tern, Whooping Crane and

Piping Plover. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH Tracker website indicates six (6) species of concern in this area. They are as follows Baird's Sparrow, Sprague's Pipit, Chestnut Collared Longspur, Loggerhead Shrike, Long-billed Curlew and McCown's Longspur.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private cultivated surface lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: On private cultivated lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns.

Remarks or Special Concerns for this site

Well is a 7,300' TD vertical Duperow Formation test in Valley County, Montana.

Summary: Evaluation of Impacts and Cumulative effects

No significant long term impacts expected, some short term impacts are expected.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the

human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: October 5, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Valley County water wells
(subject discussed)
October 5, 2011
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Valley County, Montana
(subject discussed)
October 5, 2011

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3, Location T30N R45E
(subject discussed)

October 5, 2011
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____